

The documentation and process conversion  
measures necessary to comply with the  
amendment shall be completed by 29 November 1994.

TECH POUND  
MIL-S-19500/441D  
AMENDMENT 1  
29 May 1994

#### MILITARY SPECIFICATION

SEMICONDUCTOR DEVICE, TRANSISTOR, PNP, SILICON, POWER  
TYPES 2N5740 AND 2N5741,  
JANTX, JANTXV, JANS, AND JANL

This amendment forms a part of MIL-S-19500/441D, dated 3 May 1993, and is approved  
for use by all Departments and Agencies of the Department of Defense

PAGE 3

FIGURE 1, Dimensions table,  $\phi_p$ , notes column; delete "8" and substitute "7".

PAGE 7

4.4.1, delete and substitute as follows:

"4.4.1 Group A inspection. Group A inspection shall be conducted in accordance with MIL-S-19500,  
and table 1 herein. End-point electrical measurements shall be in accordance with table 1, subgroup  
2 herein."

4.4.2, delete and substitute as follows:

"4.4.2 Group B inspection. Group B inspection shall be conducted in accordance with the  
conditions specified for subgroup testing in table IVa (JANS) and table IVb (JANTX and JANTXV) of  
MIL-S-19500, and as follows. Electrical measurements (end-points) and delta requirements shall be in  
accordance with table 1, subgroup 2 herein."

4.4.2.2, delete and substitute as follows:

"4.4.2.2 Group B inspection, table IVb (JANTX and JANTXV) of MIL-S-19500. Subgroup 3:  
Intermittent operation life (LTPD); method 1037;  $V_{CB} \geq 10$  V dc,  $\Delta T_J$  between cycles  $\geq +100^\circ\text{C}$ ,  
 $t_{on} = t_{off} \geq 1$  minute for 2,000 cycles. No heat sink or forced air cooling on the device is permitted."

4.4.3, delete and substitute as follows:

"4.4.3 Group C inspection. Group C inspection shall be conducted in accordance with the  
conditions specified for subgroup testing in table V of MIL-S-19500, and as follows. Electrical  
measurements (end-points) and delta requirements shall be in accordance with table 1, subgroup 2  
herein."

4.4.3.1, subgroup 6, delete and substitute as follows:

"b. Intermittent operation life (LTPD); method 1037;  $V_{CB} \geq 10$  V dc,  $\Delta T_J$  between cycles  
 $\geq +100^\circ\text{C}$ ,  $t_{on} = t_{off} \geq 1$  minute for 6,000 cycles. No heat sink or forced air cooling on  
the device is permitted."

4.4.4, delete in its entirety.

The attached insertable replacement pages listed below are replacements for stipulated pages. When the  
new pages have been entered in the document, insert the amendment as the cover sheet to the specification.

Replacement page

Page replaced

13  
14

13  
REPRINTED WITHOUT CHANGE

AMSC N/A

ESC 5961

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MIL-S-19500/441D  
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PAGE 8

TABLE I, subgroup 2, conditions column: Add "2/ 3/ 4/".

PAGES 10 and 11

TABLE I, subgroup 5, end-point electrical measurements, conditions column, two places, delete and substitute the following:

"See table I, subgroup 11 herein."

PAGE 11

TABLE I, add the following footnotes:

"2/ Delta requirements for JANS, table IVa of MIL-S-19500 are as follows:

- a. Subgroup 4,  $\Delta h_{FE2} = \pm 25$  percent,  $\Delta V_{CE(sat)1} = \pm 50$  mV.
- b. Subgroup 5,  $\Delta I_{CEX1} = 100$  percent of initial value or 50 nA dc, whichever is greater.  
 $\Delta h_{FE2} = \pm 25$  percent,  $\Delta V_{CE(sat)1} = \pm 50$  mV.

3/ Delta requirements for JANTX and JANTXV, table IVb of MIL-S-19500 are as follows:  
Subgroup 6,  $\Delta h_{FE2} = \pm 25$  percent.

4/ Delta requirements for JANS, table V of MIL-S-19500 are as follows: Subgroup 6,  $\Delta h_{FE2} = \pm 25$  percent,  
 $\Delta I_{CEX1} = 100$  percent of initial value or 50 nA dc, whichever is greater."

TABLE II: Delete in its entirety.

PAGE 12

TABLE III: Delete in its entirety.

PAGE 17

6.2b, delete and substitute as follows:

"b. Lead finish as specified (see 3.3.1)."

PAGE 18

CONCLUDING MATERIAL: Delete and substitute as printed below.

CONCLUDING MATERIAL

Custodians:

Army - ER  
Navy - EC  
Air Force - 17  
NASA - NA

Preparing activity:

NASA - NA

Agent:

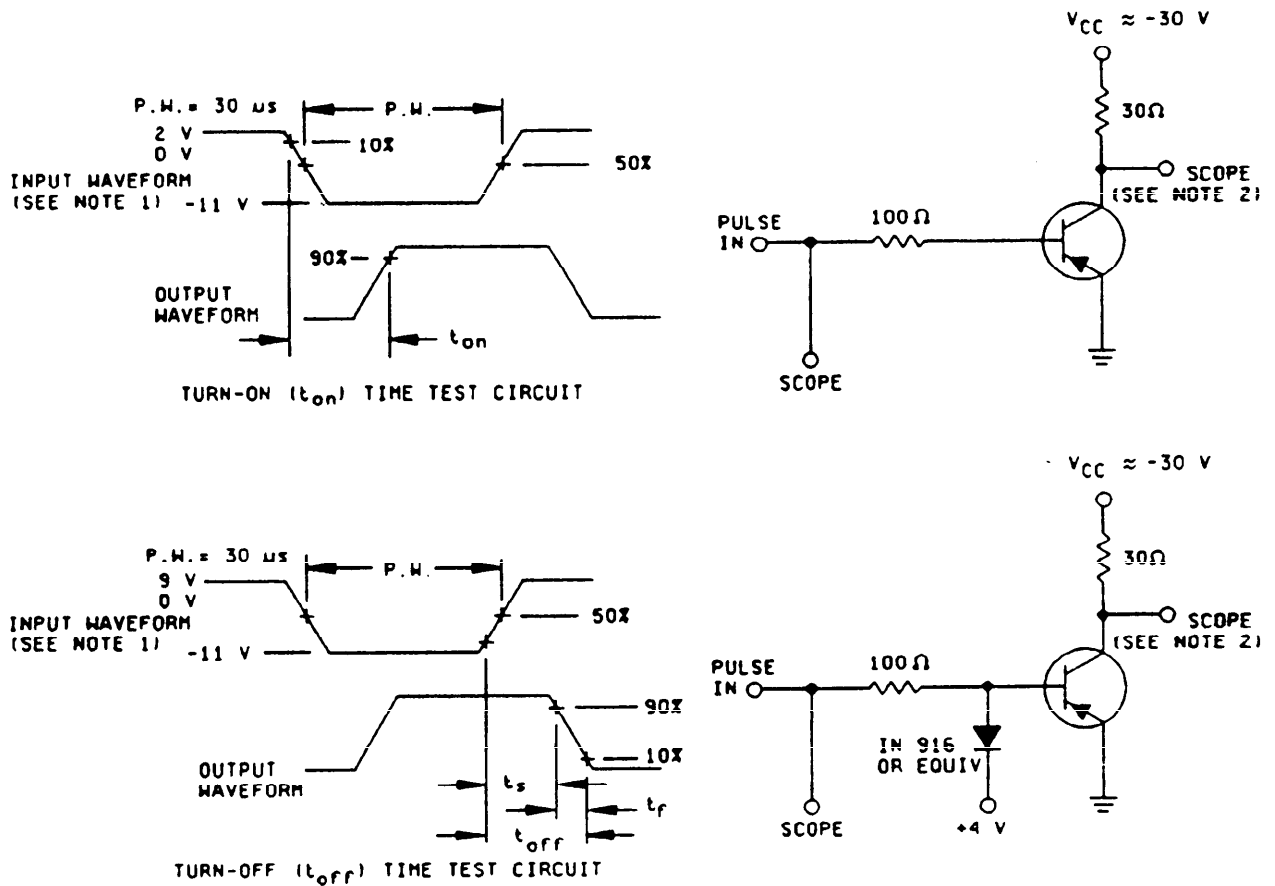
DLA - ES

Review activities:

Army - AR, AV, MI, SM  
Navy - AS, CG, MC  
Air Force - 13, 15, 19, 85, 99  
DLA - ES

(Project 5961-1562)

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NOTES:

1. The rise time ( $t_r$ ) of the applied pulse shall be  $\leq 20$  ns; duty cycle  $\leq 2$  percent; generator source impedance shall be 50  $\Omega$ .
2. Output sampling oscilloscope:  $Z_{in} \geq 100$  k $\Omega$ ;  $C_{in} \leq 12$  pF; rise time  $\leq 2$  ns.

FIGURE 3. Pulse response test circuits.

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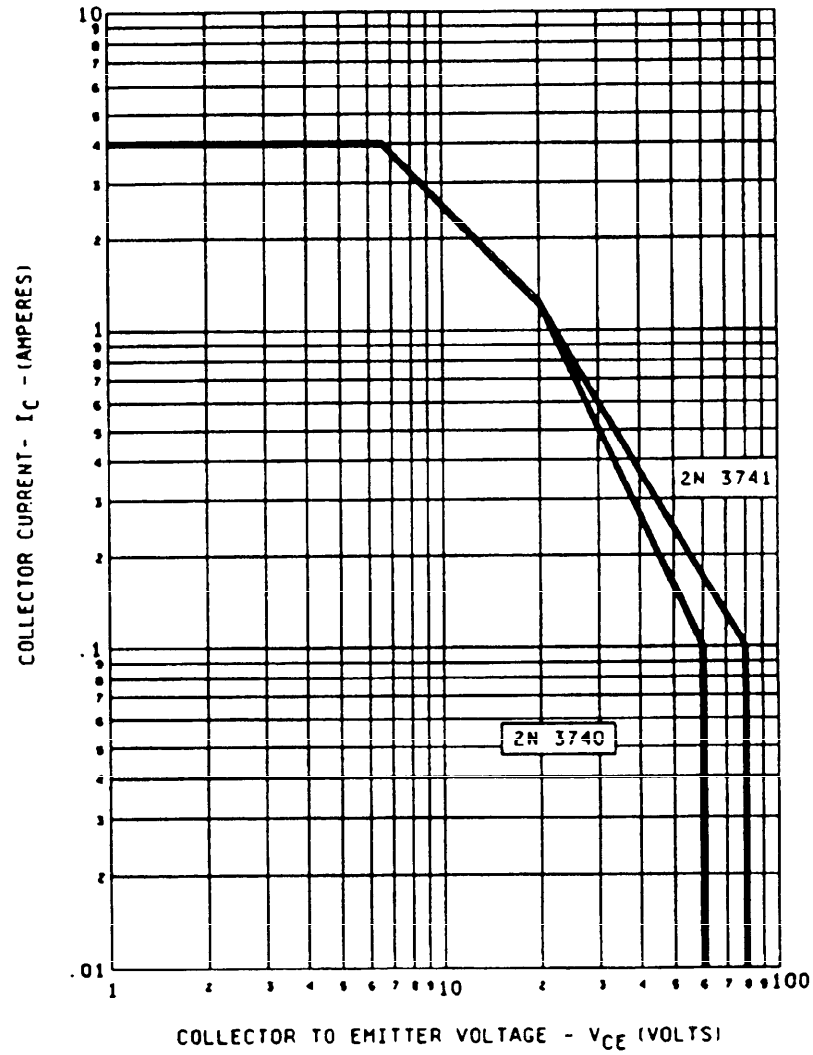


FIGURE 4. Maximum safe operating area graph (continuous dc).